



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,437	06/25/2003	Leping Huang	883.0007.U1(US)	6335
29683	7590	10/04/2004	EXAMINER	
HARRINGTON & SMITH, LLP 4 RESEARCH DRIVE SHELTON, CT 06484-6212			NG, CHRISTINE Y	
			ART UNIT	PAPER NUMBER
			2663	

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/606,437	<b>Applicant(s)</b> HUANG, LEPING	
	<b>Examiner</b> Christine Ng	<b>Art Unit</b> 2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 11-13, 21 and 22 is/are rejected.
- 7) ☒ Claim(s) 4-10 and 14-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>08/15/2003</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 11-13, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,084,858 to Matthews et al.

Referring to claim 1, Matthews et al disclose in Figure 2A a method for routing data packets in a network, comprising:

Estimating a link bandwidth (used\_bandwidth(e)) of at least one network node (source A). Refer to Column 8, line 65 to Column 9, line 8.

Calculating (Step 16) a connectivity metric ( $Z_p(i)$ ) based on the estimated link bandwidth (used\_bandwidth(e)). Refer to Column 4, lines 44-48 and Column 8, line 65 to Column 9, line 8.

Distributing (using a traversal value vector) information concerning the calculated connectivity metric ( $Z_p(i)$ ). "Each element of the vector corresponds to a current value for one of the metrics" and "each time a destination node is discovered, a traversal value vector is updated for each node" (Column 6, lines 6-16).

Using the calculated connectivity metric ( $Z_p(i)$ ), determining (Step 18) a route having a maximum link bandwidth and a minimum traffic load. After all paths are evaluated by the traversal value vectors, "the path which best fits the desired result for

Art Unit: 2663

presentation is selected". Refer to Column 4, lines 50-54 and Column 7, lines 12-18 and 28-64.

Matthew et al do not disclose that the method is used in a wireless network. However, wireless networks require better and more reliable services due to the scarce bandwidth and high bit error rates in the air interface. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the method is used in a wireless network, the motivation being in order to facilitate routing in a wireless network by finding the most efficient route for data transmissions.

Referring to claims 2 and 12, Matthews et al do not specifically disclose that the estimating uses a model of a network medium access control MAC algorithm.

However, Matthews et al disclose that each packet has a source MAC address and a destination MAC address to designate the route of the packet. If a packet has multiple different paths, the best path is determined by factors such as bandwidth. Furthermore, the path of the packet is needed in order for the system to estimate the bandwidth required to route the packet to its destination. Refer to Column 1, lines 27-30 and Column 1, line 66 to Column 2, line 21. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the estimating uses a model of a network medium access control MAC algorithm, the motivation being that the MAC addresses specify the source and destination of the packet, so that the system can determine a path and estimate the bandwidth needed to route the packet.

Referring to claims 3 and 13, refer to the rejection of claims 2 and 12. Matthews et al also do not specifically disclose that the model is a model of a Bluetooth network medium access control MAC algorithm.

However, Bluetooth is a common protocol that can be used to interconnect mobile phones, computers and other devices using a short-range wireless connection. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the model is a Bluetooth network MAC algorithm, the motivation being that the Bluetooth allows several devices in a small area to be wirelessly connected.

Referring to claim 11, Matthews et al disclose in Figure 3 a computer program embodied on a computer readable medium (memory 192) and comprising computer program code segments for use by at least one data processor (CPU 191) when implementing a routing protocol in a network. Refer to Column 10, lines 7-18.

Matthews et al do not specifically disclose a first computer program code, a second computer program code and a third computer program code to perform the steps defined in claim 1.

However, Matthews et al disclose that the memory 192 "contains a computer program or data structure for providing to a general purpose computer instructions and data for carrying out the methods". Refer to Column 10, lines 14-18. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a first computer program code, a second computer program code and a

Art Unit: 2663

third computer program code to perform the steps defined in claim 1, the motivation being that each step of the process requires a separate set of computer instructions.

Matthews et al also do not disclose that the computer program is used in a wireless network. Refer to the rejection of claim 1.

Referring to claim 21, Matthews et al disclose receiving information concerning a calculated connectivity metric ( $Z_p(i)$ ) from at least one other network node. "As each node is discovered, a traversal value vector is recorded for that node", with the traversal vector including the current value for one of the metrics of the previous nodes in the discovered path. Refer to Column 6, lines 6-16.

Referring to claim 22, Matthews et al disclose sending information concerning a calculated connectivity metric ( $Z_p(i)$ ) to at least one other network node. "The node reports to the model what the metric values are for the node and the arcs that originate from it". Refer to Column 6, lines 6-16.

### ***Allowable Subject Matter***

3. Claims 4-10 and 14-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

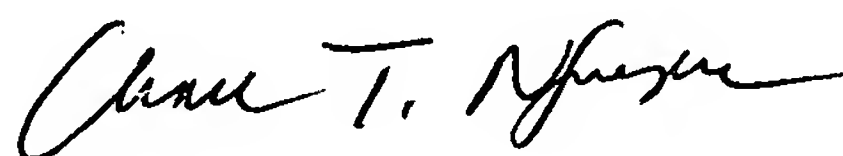
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

Art Unit: 2663

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nguyen Chau can be reached on (571) 272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng *ew*  
September 28, 2004



CHAU NGUYEN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600